



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
P.O. BOX 25201  
RALEIGH 27611-5201

JAMES G. MARTIN  
GOVERNOR

July 13, 1987

DIVISION OF HIGHWAYS

JAMES E. HARRINGTON  
SECRETARY

GEORGE E. WELLS, P.E.  
STATE HIGHWAY ADMINISTRATOR

MEMORANDUM TO: Messrs. William G. Marley, Jr., P. E.; J. T. Peacock, P. E.,  
J. M. Lynch, P. E.; C. J. Baldwin; W. A. Wilson, Jr.,  
V. A. Edwards

FROM: C. D. Adkins, P. E. *CD Adkins*  
Manager of Planning and Research

SUBJECT: FEASIBILITY STUDY, US 129, from Tapoco to Tennessee State  
Line, Graham-Swain Counties, R-2225

Our staff has completed a feasibility study for the subject proposed project. This brief analysis suggests improvements that would be logical if the project were to be funded.

A copy of our report is attached for your information. Any comments that you have would be appreciated.

LJW/plr

Attachment

cc: Mr. Frank Price, P. E.

**FEASIBILITY STUDY**

**US 129  
From Tapoco to Tennessee State Line  
Graham-Swain Counties  
R-2225**

**Prepared by  
Planning and Research Branch  
Division of Highways  
N. C. Department of Transportation**

**June, 1987**

US 129  
From Tapoco to Tennessee State Line  
Graham-Swain Counties  
R-2225

The subject project is included in the 1987-1995 Transportation Improvement Program for feasibility study and/or right-of-way protection. This report provides a brief, initial analysis of possible improvements. The project is not currently funded.

I. GENERAL DESCRIPTION

The studied section of US-129 begins at the existing bridge over the Little Tennessee River at Tapoco and extends to the Tennessee State Line, a distance of 2.9 miles (see Figures 1 and 3). The existing facility consists of 17 to 19 feet of pavement with 2 to 3-foot unpaved shoulders. The horizontal and vertical alignments are considered very poor (see Figure 2). There is no recorded right of way along the facility. The most feasible improvement is to widen the existing roadway to 22 feet with minimum 4-foot shoulders and only minor alignment revisions. The estimated cost is \$5,846,000 including \$5,600,000 for construction and \$246,000 for right of way.

II. PURPOSE OF PROJECT

In the Functional Classification Plan, US 129 is classified as a rural major collector route, except from NC 28 to the Tennessee State Line where it is a rural minor arterial route. US 129 is part of the Federal-Aid Primary System (FAP-114-1) north of NC 28 and the remainder is on the Federal-Aid Secondary System (FAS-4330).

The primary purpose for improving this section of US-129 is to upgrade the existing substandard facility to more modern standards. This is the only segment between Tennessee and Robbinsville that has not been upgraded. The studied section of US 129 consists of 17 to 19 feet of pavement with 2 to 3-foot unpaved shoulders. The pavement was resurfaced in 1982 and appears to be in fair to good condition. The horizontal alignment is poor, consisting of 53 curves varying from 4-degrees to 84-degrees. The vertical alignment includes a 10-percent grade for 0.3 mile and one at 8-percent for 1.5 miles.

Although there is no recorded right of way, the acquisition of sufficient right of way should not be a major concern since the area is generally undeveloped woodlands.

The 1987 average daily traffic volumes are estimated to be 400 vehicles per day and are expected to increase to 800 vpd by the year 2007. These volumes are estimated to include 7-percent dual-tired trucks and 3-percent truck-tractor-semi trailers.

US 129 south of the studied section is a 22-foot roadway with 4 to 6-foot shoulders, recently improved under Project 8.1930101, R-620. Within Tennessee, US 129 is similar to the studied section in North Carolina.

### III. ALTERNATIVES

The recommended improvements of the existing facility are considered the most feasible due to the rugged mountainous terrain and the low present and future traffic volumes. No other alternatives were studied; however, previous studies by the Planning and Research Branch in 1969 investigated several relocations. These studies concluded the relocations were not economically feasible due to excessive construction costs and would require extensive construction within Tennessee. At that time Tennessee officials indicated they had no plans to relocate US 129 in their area.

### V. ENVIRONMENTAL CONCERNS

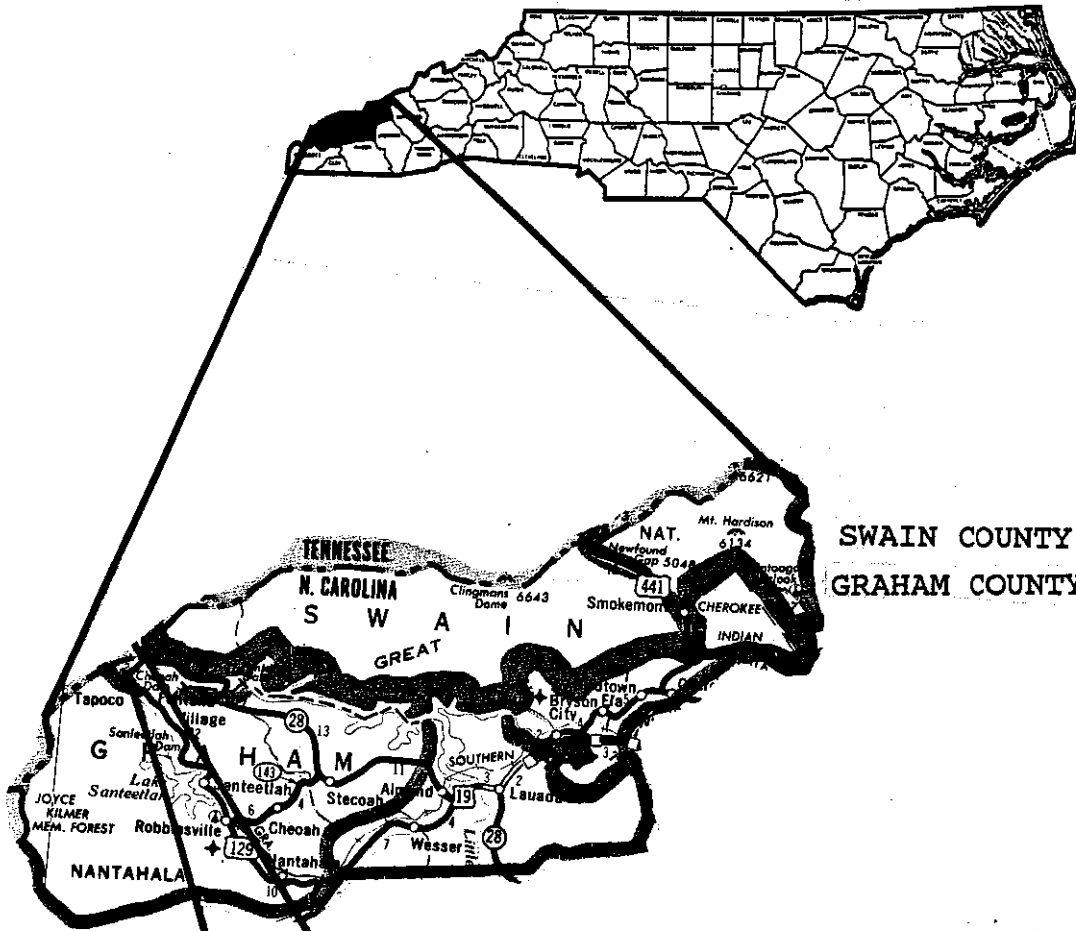
The project parallels the Little Tennessee River (Lake Cheoah) for approximately one-half its length and erosion control during construction could be a problem. Rock formations containing iron pyrite are known to occur in the project area. These acidic formations, if exposed, could adversely affect aquatic populations in the adjacent river by lowering the water pH. Iron pyrite was encountered during the construction of the adjacent section of US 129 south of the river and required special methods of testing and disposing of the material. Also, the dam at Lake Cheoah is located immediately adjacent to the existing roadway and precautionary measures during construction may be necessary.

### IV. RECOMMENDED IMPROVEMENTS

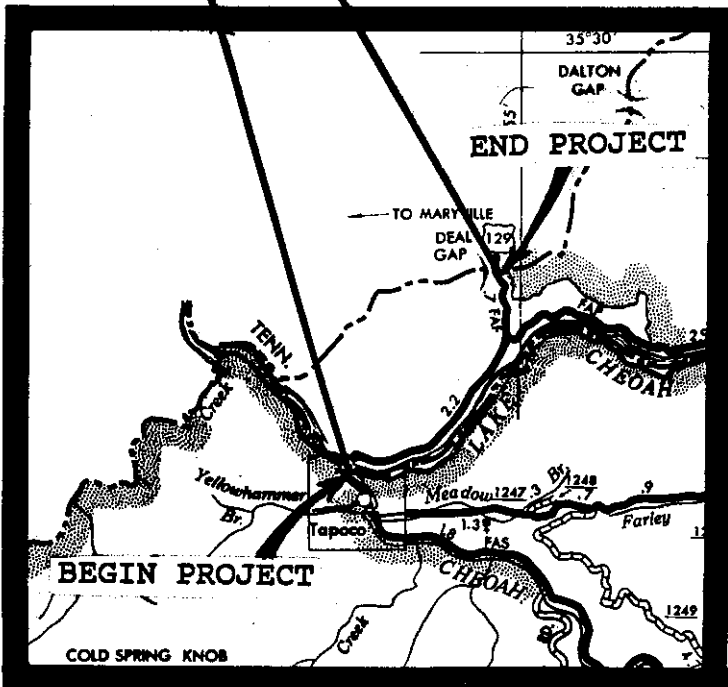
The recommended improvements consist of widening the present pavement to 22-feet and providing 4-foot minimum shoulders with only minor alignment revisions. The total estimated cost is \$5,846,000. The construction cost estimate (\$5,600,000) was provided by the Roadway Design Branch and developed with the use of 1" = 200' scale mapping. The right of way cost estimate (\$246,000) was provided by the Right of Way Branch and was based on construction limits indicated on the same mapping.

The recommended improvements were discussed with Mr. Doug Bowers, Division Engineer, and he concurs.

# NORTH CAROLINA



SWAIN COUNTY  
GRAHAM COUNTY



NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PLANNING AND RESEARCH BRANCH

US 129  
FROM TAPOCO TO  
TENNESSEE STATE LINE  
GRAHAM - SWAIN COUNTIES  
R-2225

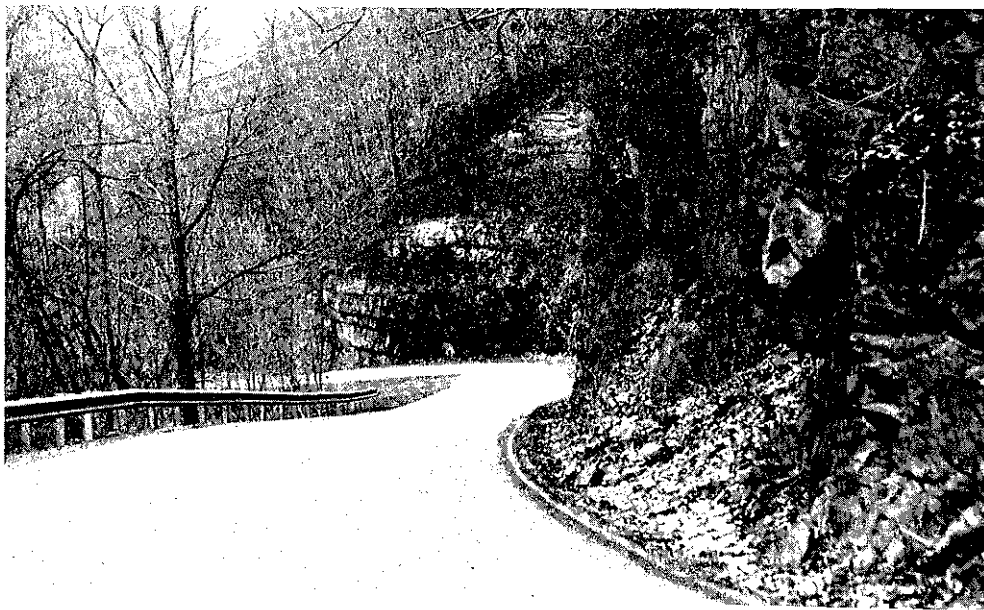
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FIG. 1

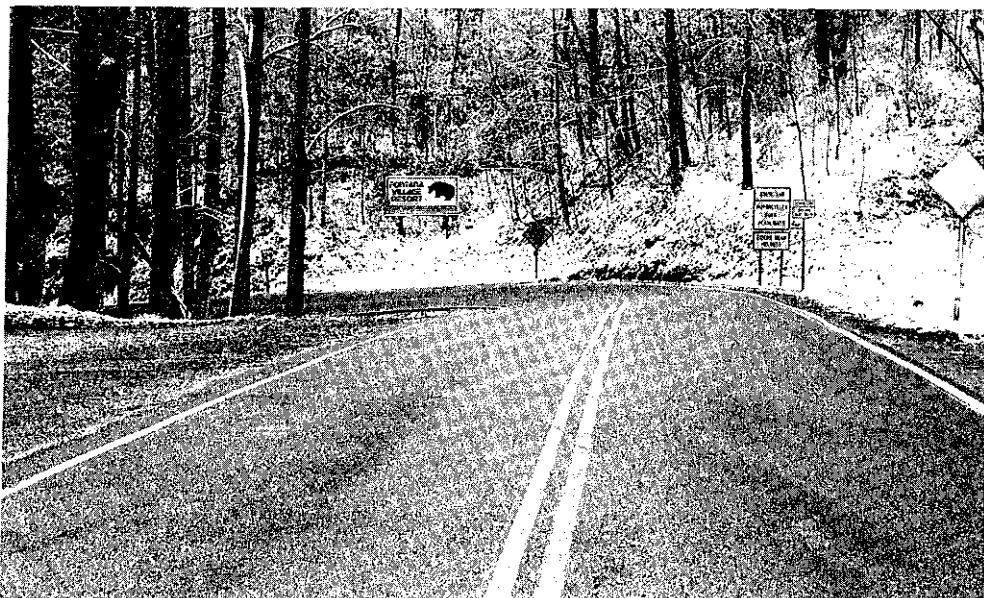
US 129  
FROM TAPOCO TO TENNESSEE STATE LINE  
GRAHAM - SWAIN COUNTIES  
R-2225



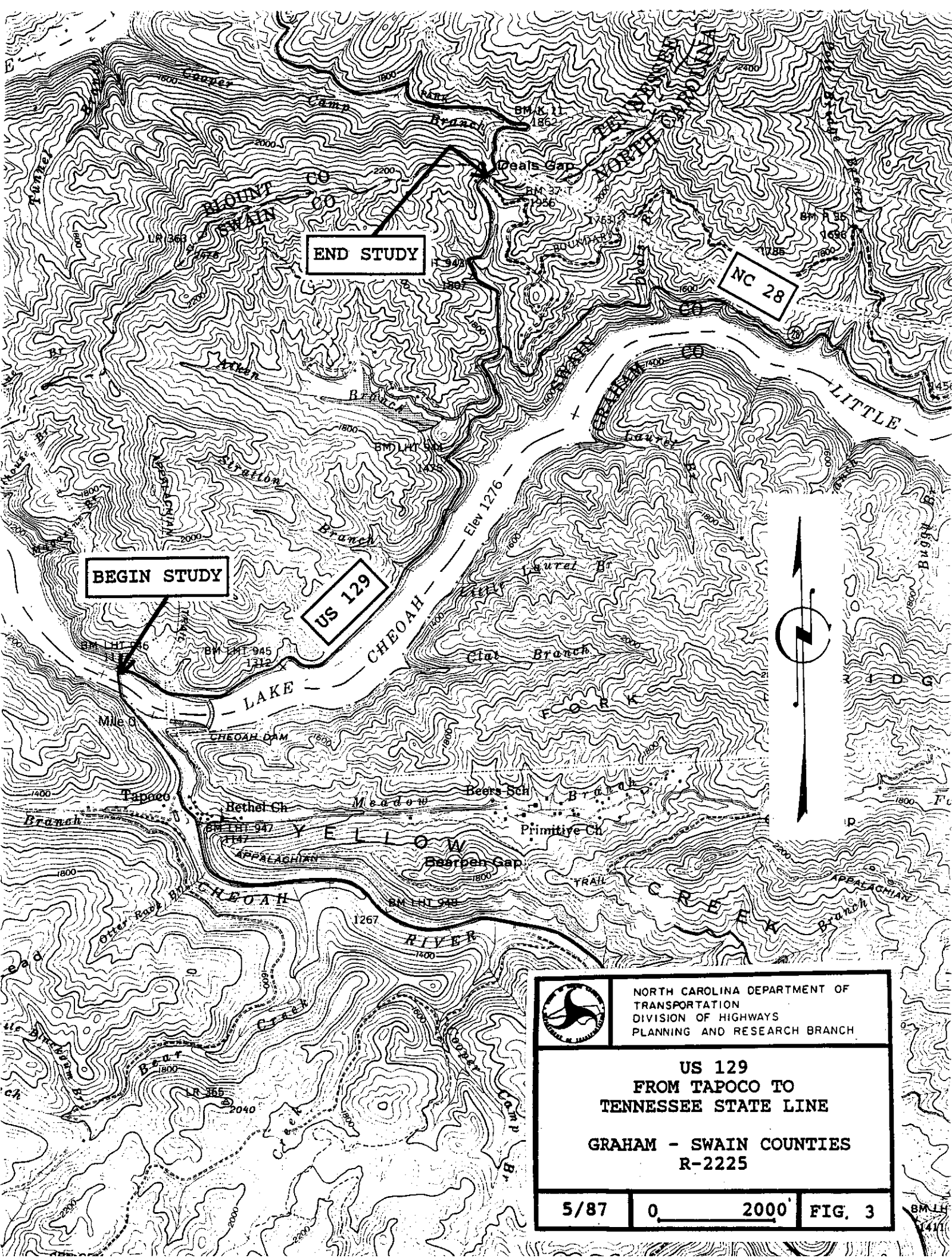
FROM BRIDGE  
LOOKING NORTH



TYPICAL VIEW



STATE LINE  
LOOKING SOUTH



END STUDY

NC 28

BEGIN STUDY

US 129



NORTH CAROLINA DEPARTMENT OF  
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US 129  
FROM TAPECO TO  
TENNESSEE STATE LINE

GRAHAM - SWAIN COUNTIES  
R-2225

5/87

0

2000'

FIG. 3